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| 10/666,621 | 09/19/2003 | Chungtang Tang | 200209305-1 | 9230 |
| 22879 7590 07/23/2008 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400 | | | | |
| EXAMINER BLAIR, DOUGLAS B | | | | |
| ART UNIT 2142 | | PAPER NUMBER | | |
| NOTIFICATION DATE 07/23/2008 | | DELIVERY MODE ELECTRONIC | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/666,621

Applicant(s)

TANG ET AL.

Examiner

DOUGLAS B. BLAIR

Art Unit

2142

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-14 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 6-8 and 15-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 1/29/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claim 1-16 and 23-25 in the reply filed on 4/17/2008 is acknowledged.

Claims 17-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/17/2008.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 9-14 and 23-25 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 6,980,524 to Lu et al.

As to claim 1, Lu teaches a method of identifying a close-by node in a region of an overlay network, wherein the overlay network is a logical representation of a physical network (col. 8, lines 31-60), the method comprising: determining first proximity information associated with a location of a first node in the physical network (col. 8, lines 31-60); searching through a map associated with a region of the overlay network using the first proximity information, wherein the map includes proximity information associated with locations of nodes physically

close in the physical network (col. 8, lines 47-60); identifying a routing node in the region of the overlay network based on the searching through the map, wherein the routing node is a node in the region physically closest to the first node in the physical network relative to other nodes in the region (col. 8, lines 57-60).

As to claim 2, Lu teaches the method of claim 1, wherein searching through a map associated with a region of the overlay network using the first proximity information, further comprises: comparing proximity information in the map associated with a plurality of nodes in the overlay network to the first proximity information to identify the node in the region physically closest to the first node in the physical network (col. 8, lines 31-60).

As to claim 3, Lu teaches the method of claim 1, further comprising: storing routing information for the routing node in a routing table for the first node, such that messages transmitted to the region of the routing node are transmitted to the routing node in the region from the first node wherein the first node is located in another region in the overlay network (col. 8, lines 31-60).

As to claim 5, Lu teaches the method of claim 1, further comprising storing the map in nodes logically close in the overlay network, such that the proximity information in the map for the nodes physically close in the physical network is stored in the nodes logically close in the overlay network (col. 8, lines 31-60).

As to claim 9, Lu teaches a method of identifying a node in a region of an overlay network, wherein the overlay network is a logical representation of a physical network, the method comprising: determining first proximity information associated with a location of a source node in the physical network (col. 8, lines 31-60); searching through a map associated

with a target region of the overlay network using the first proximity information, wherein the map includes proximity information associated with locations of nodes physically close in the physical network (col. 8, lines 31-60); and identifying a subset of nodes in the target region closest to the first node in the physical network based on the searching through the map (col. 8, lines 31-60).

As to claim 10, Lu teaches the method of claim 9, further comprising: determining distances from the source node to the subset of nodes; and selecting from the subset of nodes a node closest to the source node in the physical network based on the determined distances (col. 8, lines 31-60).

As to claim 11, Lu teaches the method of claim 10, further comprising: entering the selected closest node in a routing table for the source node, wherein the selected closest node is used by the source node to route messages to the target region (col. 8, lines 31-60).

As to claim 12, Lu teaches the method of claim 9, further comprising generating proximity information for nodes in the overlay network, the generated proximity information including the first proximity information and the proximity information for the map, wherein generating the proximity information comprises: selecting landmark nodes in the physical network; determining distances from a substantial number of nodes in the overlay network to the landmark nodes; determining locations in the physical network for the substantial number of nodes based on the determined distances to the landmark nodes (col. 8, lines 31-60).

As to claim 13, Lu teaches the method of claim 12, wherein the locations comprise landmark vectors for the substantial number of nodes, wherein the landmark vectors include

components representing distances from each of the substantial number of nodes to each of the landmark nodes (col. 8, lines 31-60).

As to claim 14, Lu teaches the method of claim 9, further comprising: identifying a location of a node in the target region in the overlay network storing the map; and transmitting a map lookup request to the node in the target region (col. 8, lines 31-60).

As to claim 23, Lu teaches a node in an overlay network, wherein the overlay network is a logical representation of a physical network, the node comprising: means for determining first proximity information associated with a location of the node in the network (col. 8, lines 31-60); means for searching through a map associated with a region of the overlay network using the first proximity information, wherein the map includes proximity information associated with locations of other nodes physically close in the physical network (col. 8, lines 31-60); and means for identifying a routing node in the region of the overlay network based on the searching through the map, wherein the routing node is a node in the region physically closest to the node relative to other nodes in the region (col. 8, lines 31-60).

As to claim 24, Lu teaches the node of claim 23, wherein the node comprises means for storing routing information for the routing node in a routing table, such that messages transmitted to the region of the routing node are transmitted to the routing node (col. 8, lines 31-60).

As to claim 25, Lu teaches the node of claim 23, further comprising: means for storing the map for the region; and means for updating the stored map in response to detecting predetermined changes to the network (col. 8, lines 31-60).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,980,524 to Lu et al. in view of the Paper entitled "Building Low-maintenance Expressways for P2P Systems" by Zhang (copyrighted in 2002, part of IDS filed on 1/29/2004).

As to claim 4, Lu teaches the method of claim 3 however Lu does not explicitly teach an expressway content-addressable overlay network.

Zhang teaches the use of an overlay network is an expressway, content-addressable, overlay network, and the first node and the routing node are expressway routing nodes in the overlay network (First page, for example).

It would have been obvious to one of ordinary skill in the Computer Networking art at time of the invention to combine the teachings of Lu regarding overlay networks with the teachings of Zhang regarding expressway content-addressable overlay networks because such networks improve efficiency (Zhang).

Allowable Subject Matter

Claims 6-8 and 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 6, Lu was not found to anticipate the limitations of mapping the landmark vectors to points in a region in they overlay network and storing the landmark vectors at nodes associated with the points in the region as the proximity information for the map. No references were found that would make these limitations obvious in view of Lu. As to claim 15, Lu was not found to teach identifying a location of a node in a target region storing the map by hashing a landmark number associated with the target region using a hash function. No references were found that would make these limitations obvious in view of Lu.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS B. BLAIR whose telephone number is (571)272-3893. The examiner can normally be reached on 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Douglas B Blair/
Examiner, Art Unit 2142